



# Enhancing user experience through web design - Case Shoppire Luu, Thuy Minh

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# Enhancing user experience through web design - Case Shoppire

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## **Abstract**

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Since the beginnings, the internet has gone through several stages of developments and many people currently have daily internet access on various devices. This has led to the creation of UX design, which studies human behavior when interacting with a program or device. UX design has since been a phenomenon which attracted the attention of many people. According to LinkedIn stats, there are currently over 900,000 UX Designers on the LinkedIn network worldwide.

The digitalization of services, including online shopping, has resulted in online shopping platforms and fierce competitive position between startups in the same industry. Having a website with good user experience helps businesses improve their reputation and build relationships with customers more easily.

The thesis idea was proposed by the author to Shoppire company, an internet based startup with a unique business concept. The purpose of the thesis is to help the company study customer behavior while using their service and provide recommendation on how to improve web design based on the research.

The knowledge base focuses on UX design and website marketing. The definition and history of UX design industry are presented as well two different approaches to UX design which are Agile UX and Lean UX. The knowledge base also defines the 4 components of a good UX design which arevaluability, desirability, usability and adoptability. The knowledge gathered from various sources is later used in the empirical study case.

The design process of Shoppire website began on November 2015 and is still currently going on as it is an iterative process. Interviews, usability testing, persona, customer journey and heuristic evaluation were conducted to collect data about users. The data was analyzed which are then used to form new ideas and recommendation for the next design research.

The result of the research reveals the weaknesses of Shoppire's current website included such factors as an out-dated design with too many advertisements, a lack of explanation about the company's concept which leads to confusion for potential customers, a purchasing process which requires too many clicks.

The research concludes with suggestions on how to improve the design for the next update such as improving the design of Shoppire's homepage to give more information on how to complete a purchase, updating the overall design to a flat design to keep up with current trend, removing ads and applying better optimization to promote Shoppire.

**Keywords:** Website, UX design, user experience, usability, online store

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## 1 Introduction

The first generation of website and web browser was introduced in 1990s by Tim Berners-Lee. As technology developed, many changes have occurred and improved web design from strictly text-based to the current trend of responsive, flat design. Websites are required to provide visitors with great user experience in order to ensure the traffic and engagement from customers to business.

For companies, website is an essential tool in the marketing strategy for the business as it helps establish the credibility, visibility and accessibility of the business plus increases customer's engagement in the company's products and service. However, due to the misbelief that designing and maintaining a good website is expensive and is not worth the investment, nowadays, many businesses, especially small businesses either have a simple, unresponsive website or do not have a website at all. In fact, a website with excellent user-centered design not only reach and interact simultaneously with a large amounts of customers and potential customers world-wide but also help improve risk and cost management of the company.

Shoppire is a start-up company founded in June 2015. It is a predictive shopping platform that uses data analysis and local aggregation to make the shopping experience of the customers a faster and more pleasant ones. For startup companies, website is considered one of the most powerful marketing tools for the business as it helps establish the credibility, visibility and accessibility of the business thus increases customer's engagement in the company's products and service. Shoppire published the first version of its website in November and it is vital for the company to make constant improvement and adjustment to the website in order to keep up with the market and the constantly changing environment.

### 1.1 The objectives of the thesis and research questions

The thesis concentrates on the role of UX design in enhancing user experience of a website and website usability. In addition, the thesis also presents information about design of the website, its elements and how the upcoming trends can affect the future of website marketing.

The purpose of the thesis is to evaluate the user experience level of Shoppire's website and propose suggestions and recommendations to assist Shoppire in improving their website into an economical and efficient user-centered website to serve users from various different backgrounds with the focus on the Finnish and Indian market. The results will help to evaluate Shoppire's website regarding user experience friendliness and usability.

This is the first UX design research conducted in Shoppire and its result would benefit the objectives of Shoppire's website.

The research questions of the thesis are listed below:

- What is user experience design and web design?
- What are the elements of a good web design and consequences of having a bad design?
- Which design and evaluation methods are most suited for a startup company such as Shoppire?

## 1.2 Limitation

The limitation of the thesis lies in insufficient data and statistics. Since UX design is a young field compared to engineering or graphic design, there are fewer available resources on the topic. Poor transparency in results of researches on usability testings and web evaluation reports restricts the accuracy of statistic presented in the paper.

This kind of research has not been conducted previously in Shoppire thus there is no support documents to rely on for indepth knowledge and fact of Shoppire's plan and goal for its website. In order to build a complete version of the website, a lot of time and effort need to be invested which might exceed the timeframe the thesis author has planned to finish the thesis.

In addition, Shoppire's team consists of mostly people who work part-time for the company without strict working hours, one simple process or decision may take more time than intended, which further delays the whole process.

## 1.3 Research approach

The thesis aims to present a clear definition and process of designing a user-centered website, as well as the opportunities and economical benefits of focusing on user experience from early stages. For that purpose, a deductive approach is the chosen. The methods used in this thesis are qualitative research including interviews, usability test, persona, customer journey and heuristic evaluation to discover reasons and interests of users in specific test subjects. Literature and online resources are used to obtain knowledge and data for research purpose.

Many user interviews were conducted with a semi-structured questionnaires to encourage users to be more open with the responses. The questions are related to user's knowledge of the company, their opinions on the business concept and how they feel when using the product offered. Interview within the company was also carried out with the lead of the IT team in

order to obtain information on the website's traffic and design and the CEO of Shoppire to get permission, opinion and better understanding of Shoppire's future plan.

Due to the internationality of the team, everything was in English. Many researches were conducted with the cooperation of other staff members. The plans and other documents can be found in the appendices.

#### 1.4 Framework of the thesis

There are ninth chapters in the thesis. The first chapter contains information about the topic background, the purpose of the thesis and the research problem.

Terminologies, theoretical framework and related factors of user experience design are presented in the second chapters of the thesis to gain more understanding on the phenomenon and how to recognize UX design elements. The third chapter concentrates on defining website as a marketing tool and how UX design can be applied to improve a website. In addition, the prediction for the future of trend of UX design and website marketing is introduced.

In the fourth chapter, different research and design methods were explained, followed by information about the chosen method for the design process. A part of this chapter is dedicated to evaluating the validity and reliability of the research that has been conducted.

The empirical study is presented in the fifth and sixth chapter. The company is introduced in the fifth chapter in detail. Several aspects of the company such as marketing, SWOT Analysis, website, as well as future plan and expectation are covered. Chapter six introduces the research that was conducted and its results.

Chapter seven present the final conclusion and recommendations for Shoppire based on the data gathered from the research. Chapter eight explains the linkage between the theory and the empirical study. The thesis ends with chapter nine, a summary of the study.

## 2 Knowledge background

### 2.1 Understanding user-centered design

Smart organizations nowadays understand that simply offering a unique product or service is not enough in meeting user's needs as technology only plays a small role. To increase user's satisfaction and increase their loyalty, business must offer not only an effective products, but



also a smooth interaction and experience for the users throughout the whole process. In order word, organization must invest more in the professional practice of use experience design.

In this chapter, the origin and concept of UX design is introduced and how fast the industry has been growing in recent years. The chapter also discusses the effect UX design and its element have on products in general and a website in particular.

## 2.2 What is user experience design?

User experience itself is a controversial concept since many experts have offered their own version of the concept yet there is not an official definition that's favored by all at the moment. It can be understood as a person's feelings, perceptions, understanding and responses toward a product, system or service prior to, during and after usage of said product, system or service. Under different circumstances and environment, each individual's experience and attitude toward the same subject is bound to vary, thus making the nature of UX dynamic and subjective (Buley 2013).

The UX design field is growing rapidly with various undergraduate and graduate level programs to train professional UX designer. Many UX designers nowadays are crossovers professionals from other fields, which often are engineering, design, project management and technical writing, etc. These people provide new experiences and insights from their previous respective field, which help take UX design to new levels (Buley 2013).

UX design is often mistaken as user interface design (UI) since both fields have a strong connection with human factor and usability. However, while UI design refers to the design of a computer's or a device's screen, UX design involves both the tangible and intangible aspects of a product plus the user's goals and motivation while using the products. UX designers all work with one specific purpose - how to design a flowing experiences that serve and encourage the human users (Buley 2013).

## 2.3 History of UX design

According to Buley (2013), the practice of user experience design, abbreviated as UX design begun in the machine age in 1900s. Frederick Taylor and Henry Ford were the best representatives of that era by how they pioneered ways to improve efficiency, productivity of the human labors as well as routinized work procedure. However, the two also faced heavy criticism as to how they dehumanized the workers and treated them as part of the machine system, which

inspired Taylor's research on how to improve the workflow and interaction between human and machine, similar to the practice of today's UX design.

During the first half of the 20<sup>th</sup> century, in-depth researches into human factors and ergonomic began, introducing design and tools more suited for human capacities. As workplace computers proliferated, the concept started to develop into an important concern for designers worldwide. By the mid 20<sup>th</sup> century, as the focus on human being the main key contributor became an important issue, many organizations, such as Toyota, began to develop their own system in which workers are encouraged to participate in evaluating the production process. During this period, cognitive science became a field of interests for many researchers, and this motivated industrial design Henry Dreyfuss to publish a textbook called *Designing for people*, which emphasized that every product and service designed is by and for people. In this book, Henry introduced many methods that are still used by modern designers to understand and design for user need (Buley 2013).

More breakthroughs came when PARC, a Xerox research center, produced many conventional graphic user interface that greatly influence Apple Macintosh, the first commercial graphic interface. According to Norman, Miller and Henderson (1995), user experience became an official term through Donald Norman, a cognitive psychologist, who joined Apple in the early 1990s. Norman's researches in cognitive science, usability and human interface led him to the title of the first User Experience Architect. In January 2007, Apple introduced the first iPhone, which emphasized on the delivery of great user experience to the market, marking a major milestone in the evolution of UX Design. On October 23, 2012, in order to strengthen the development of Finnish service business as well as introduce the benefits and opportunities of Service design to Finland, Laurea University of Applied Sciences established the Finnish Chapter for Service Design Network.

## 2.4 Approaches

### 2.4.1 Agile UX

Agile development is a type of project management that was created to boost the development process of software based on the principles of Agile Software Manifesto which was developed in 1990s. Throughout the years, the Agile movement has evolved and variation of themes were introduced into workplace, however the 12 core value of the manifesto still hold true. In short, the principles of the manifesto include:

- Deliver valuable, working software and communicate with customers early, continuously throughout the development process.

- Welcome changes during the development process, if it is what the team agrees on during regular meetings.
- Create a good working environment with smooth communication flow between all members in the team with face-to-face conversation being the main method of transferring information. (agilemanifesto 2001)

According to Loranger's case study (2014), by compressing time to make the development process more efficient, the agile team sometimes has to neglect researching about the users thus creating bad user experience. An effective UX designer in an Agile team need to be proactive in term of preplanning, prototyping and testing idea. Solid concept and mockups need to be introduced to the potential users and team members before the sprint occurs in order to keep up with the agile schedule.

#### 2.4.2 Lean UX

Lean startup is a new approach for startup companies using Steve Blank's customer development model. This methodology requires companies to develop products based on the approval of the target customer segments, which means launching experimentations and tests in order to collect customer feedback while gradually shaping and improving the original product. (Blank 2013)

Lean UX is a new trend of UX design adapted for Lean Startup. It relies heavily on User Centered Design, while also adapting the agile approach of working in shorter cycle to get feedback on products faster. However, even with such influences, on its own, Lean UX has its own unique identity. According to Klein (2013), being data driven is the key factor to Lean UX. Many tests and hypothesis are run when a new assumption or feature are introduced to evaluate and validate its impact on user behavior. Due to its nature cut off wasteful process and resources, Lean UX is often cheaper and faster than the traditional UX, it is being adopted to various Startups that also follows Lean practice.

#### 2.5 UX Design process

UX design is a process of designing interactive experiences, most often in the digital channel, by applying collections of methods with the prime concern being the user experiences. As established above in section 2.1, many UX designers are crossovers from various background, thus they must make themselves familiar with the UX Toolkits and framework. Overall, it can be simplified to a simple 4-step process where the designers learn about and choose a suitable UX toolkit, determine a feature that requires improvement, get to know about the users and finally start designing. The most important part is to carry out user studies and test prototypes to

analyze specific touch-points in the service from both the designer and the end customers' point of view. In addition, they also explore the sub system and its component, e.g. for an online shop, UX designer would study about how well buyers react to the design of the page; how easy it is to navigate through the product catalogue; and how effective are the function of page to help enhance the buying experiences for the buyers (Buley 2013).

### 2.5.1 UX Toolkit

A UX design process is an endless circle aims to improve the service or products constantly. A good UX process is one that complements the other business processes, thus many models and diagrams have been created. The process has different stages depending on a number of factors: the project, the client and the budget (Buley 2013).

Nevertheless, the UX process is a very iterative one. It has considerable overlaps due to the constant communication and feedback back and forth from end-users. UX designers learn more information about the products, its target and stakeholders as the project proceeds, he or she also learns about the project's problem and constraints. From each iteration, beta releases and outcomes are evaluated and improved accordingly. As a UX designer, there are a collection of tools and techniques available to choose from that best suits the method and the strategy of the project (UX Mastery 2014).

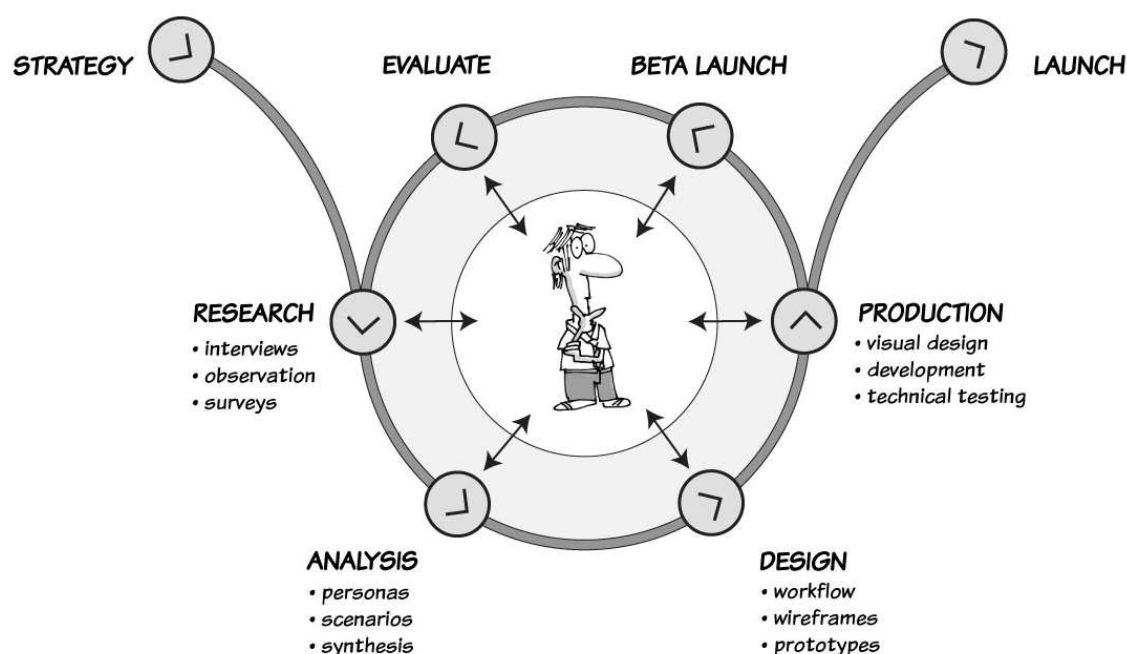


Illustration 1 A traditional UX design process

## 2.5.2 Steps

### 2.5.2.1 Strategy

In order to design a successful project, understanding the organization is an important factor. Designers in this step usually spend time with key decision makers to understand the strategy they want to follow, including brand image, principles, long-term visions as well as their expectation for the result. This helps in obtaining a high level overview of the company as well as shaping the goal of the project to suit the corporate objectives (UX Mastery 2014).

### 2.5.2.2 Research

Research phase, also known as Discovery phase, varies a lot depend on the scale and the complexity of the project and the company. Designers must establish a clear vision of the target user by performing various levels of user researches to understand the identity and motivation of the users. In addition, many analysis tools such as SWOT, PEST and STEEPLE are used to assess the strengths, weaknesses and other external circumstances that might affect the user experience of a product (UX Mastery 2014).

Complex projects and big company tend to comprise significant user, market and competitor research to create an informed user experience. However, for startup company, this step is usually skipped or taken less seriously. On the other hand, this can be consider a vital process for Lean startups since Lean UX relies heavily on user input during their design process.

### 2.5.2.3 Analysis

After collecting data in the Research phase, UX designer begins to analyze, organize and draws insights from the data in order to make inferences. Next, the designers needs to communicate their understanding back to the end-users to validate any conclusion or assumptions made (UX Mastery 2014).

### 2.5.2.4 Design

The Design phase of a UX project is an iterative and collaborative circle built on user feedback established in previous phases. This phase introduces various input and ideas to users in forms of paper prototypes, interactive wireframes or semi-functioning prototypes to collect more feed back to refine the ideas. This stage, especially in a completely new project however, must be done in low-fidelity in order to protect graphic identity, branding or visual details of the

project or service (UX Mastery 2014).

#### 2.5.2.5 Production/ Implementation

A high-fidelity version of the product or service is introduced with full content and digital asset to validate with stakeholders and end-users through user testing sessions. From this point, the role of UX designer is to collaborate with developers to communicate and support the vision of the products (UX Mastery 2014).

After the end of a round in the design process, the UX design can produce a one page summary of what happened in the process and what must be done next. This report works as a way to highlight the current methods, their results and what to expect in the next update (Buley 2013).

### 2.6 Elements of a successful UX design

Individual users have very different perceptions and expectation of a design, thus it is impossible to introduce a single uniform solution that can satisfy everyone. According to Brattle (2015), there are certain parameters designers should focus on during the developmental stages of a project. Those key parameters are value, usability, adoptability and desirability.

#### 2.6.1 Value

Offering valuable experience to users is a key factor in gaining success in the marketplace and as well as obtaining customer loyalty. The product is considered valuable as long as it can support both user's explicit and implicit needs. For example, while the traditional phone is very straight forward and easy to use, when Apple introduced its first Iphone, the market immediately bloomed because the new phone provided users with many new materials, from web searching to gaming and touch screen technology even though prior to this, it was believed that those features were unnecessary on a phone. By introducing the new features, Apple's Iphone added much values to the devices hence satisfied both user's common need and unexpressed needs, setting a new standards for UX designers in creating future devices (Guo 2012).

While being closely affiliated with usability and desirability, the key elements that highlight a product are its functionality and features. Adding meaningful values to a product is the foundation of a good user experience, thus making a product valuable to user (Guo 2012).

#### 2.6.2 Usability

The term usability is usually the first element people think of when referring to user experience, often mistaken to be the only major factor in UX design while correctly, it is just one of the components of use experience (Guo 2012).

The usability of a design is about how users can accomplish their goal using the product the company provides. It is a factor that decides the usefulness of a product since there can be many usability issues that interfere with user's ability to finish an intended task. Being a vast topic itself, usability has an entire generation of professionals who devote their careers to advancing and improving the field since user experience of a product depends a lot of the usability of a product. According to Nielsen (2012), usability is comprised of five different components including learnability, efficiency, errors, memorability and satisfaction which will be explained with further details in Section 3.3 Element of a website in Chapter 3 of this thesis.

### 2.6.3 Adoptability

Guo (2012) states that adoptability is closely connected to design of workflows as it is the element that indicates how easy it is to access the content by new and existing users. While usability is used to measure how users feel when using a product, adoptability is the stage beforehand when user browses, making decision and starting to use the product. Brand perception and credibility also play an important role in creating good adoptability for products as unauthentic content and weak brand image will create negative impact on user's perception of the product.

Naturally, it is a UX designer's job to design a smooth workflow that support user's ways to discover and access the actual products. Unfortunately, it is often a neglected aspect in the UX strategy as many designers focus on developing the products but forgetting to create easy ways for users to access it. To create good adoptability for the products, the team must consider the context that would trigger user's need to use the product, how user would normally choose to approach it and how those two factors could impact the overall design of the workflow (Guo 2012).

One of the products that is greatly affected by adoptability is a website. Nowadays, users can choose to access website from many different browsers and devices, thus if a website cannot be accessed by certain browser that users preferred, not responsive to different device screens or contain heavy multimedia content that would drastically slow down the loading process, that website can be quickly dismissed as inaccessible (Brattle 2015).

#### 2.6.4 Desirability

The last but not any less important parameter of UX design is desirability, an aspect that appeals to the emotional side of users. More than often, products that are cheap, simple and easy to use fail to appeal to users due to their lack of desirability. A classic sample for this is the introduction of the Iphone into the market against the traditional phone. It captivate users's attention by not only providing extra features but also innovative design which was completely contradictory to the original handphone design (Guo 2012).

Notwithstanding the important role of design and graphic, desirability is also defined within the context of users' tasks, meaning a desirable product must be able to encourage users to engage the product for their intended uses. This particular aspect often result in many designs that do not appeal to the vast majority but nonetheless score high on desirability with its target customer segment (Guo 2012).

#### 2.7 The role of UX design in website

According to Cousins (2013), the factor that defines the success of dominated websites in the marketplace is the positive user experience these sites provided to its users through careful planning and development. For a digital resources such as tools like websites, applications, especially complex the ones that are built to last a long time, user experience and visual identity are two equally important aspects as a good-looking website cannot attract users or hold their attention long enough if they do not enjoy the interaction with the site or do not know how to utilize it.

The importance of carefully planned UX design heightens even more for intricate or in-depth websites as users need to be able to understand and navigate the website's content as quickly as possible. One of the most complicated online platforms is retail websites due to their two main activities - browsing and purchasing. The UX designers in charge must ensure to provide the potential customers with a rewarding and pleasant browsing experience and a fast and simple purchasing process. If the right approach and strategy are applied, good UX design can help small, young businesses and startup enterprises gain reputation and boost growth. (Sandu 2015).

### 3 Website as a marketing tool

The first generation of website and web browser was introduced in 1990s by Tim Berners-Lee which lead to the existence of the first generation of internet marketing. The first internet marketing campaign was released by Bristol-Myers Squibb, a US-based drug company, with the



purpose of increasing public awareness in using a certain drug called “Excedrin”. Online free sample was also provided to internet users. This resulted in an addition of more than 30 000 online customers for Bristol-Myers Squibb. Followed their example, Microsoft, IBM and Yahoo also launched their online marketing campaigns and Yahoo ended up being one of the online-based firm that earn highest profit from online marketing. By the year 1997, the budget of the online marketing industry has reached estimately one billion dollars. As the numbers of internet users and home based business increase, the online marketing industry also expands greatly (Hathhorn n.d.).

This chapter introduces the important elements needed to create a good website that can generate income and traffic for the business. It also introduces the current situation of website marketing and upcoming trends.

### 3.1 UX design for website

Web design is the process of creating and developing websites, including graphic design, content production, interface design, user experience design, authoring and search engine optimization. Despite often being used interchangeable with the term web development, web design is a subset of web development together with web engineering (Techterms 2013). Web design includes graphic design and usability engineering which represents the visual appeal of a website and its function.

An effective website is one which satisfies both user’s content and usability need meaning, it provides users with good user experience. Applying principles of UX design on websites can provide visitors with great user experience, thus help ensure the traffic and engagement from customers to business.

### 3.2 Elements of a website

In one article of The Guardian, Weatherhead (2014) reports the findings that due to the instant availability of websites and highspeed internet access, the attention span of an average internet user as well as their patience for in depth analysis of a website has drastically decreased . The report also states that web sites might lose up to 32% traffic if they take too long to load and even a one second delay can result in 11% loss of page view. In addition, complicated or unpleasing design can also cause websites to lose visitors within seconds. For these reasons, web owners and UX designer must work together to create a quality content website with a design that can withhold users’ attention.

### 3.2.1 Web design

In recent years, various new design trends have emerged, leading to the creation of many new elements and styles. With thoughtful incorporation and arrangement, these elements can help create compelling website with aesthetically pleasing format that not only tells stories and explain the business but also makes the site content look good to potential users on different devices and offers them incentive for return visits (Vocell 2015).

Since there are many design elements, it can be quite challenging for designers to narrow down on which one to focus on. According to 5 Essential Elements Of A Good Website (2016), there are 5 principles designers must follow when creating a website.

The first principle is to have a balanced color palette that highlights the business's logo and images but still remain pleasant to the eyes. The colors should help establish a visual orders and level of importance for the function and content on the website (5 Essential Elements Of A Good Website 2016).

Secondly, the website's theme should be consistent, clear and focused with a more unique and eye-catching homepage to grab user's attention and connected subpages. Excessive usages of images and irrelevant articles should be avoid to keep the focus on each page's respective topic (5 Essential Elements Of A Good Website 2016).

Font is the third principle to be addressed. A good selection of fonts can boost the overall appearance of the website while a bad one can be visually distracting or make the content hard to follow. It is also important to keep in mind that fanciful fonts, though visually good looking, if used in the wrong context, can make the website lose credibility (5 Essential Elements Of A Good Website 2016).

The fourth principle is having a good usability to satisfy user's need. More information on this topic will be discussed in section 3.3.2 Web usability, chapter 3 of this thesis.

The last principle to having a well designed website is to provide information on how users can contact the business. A good strategy is to present easy access to the business's contact information to reduce the time users spend on looking for the info thus having more time to explore the website for their intended purpose (5 Essential Elements Of A Good Website 2016).

### 3.2.2 Web usability

Usability is a quality attribute used to assess a website's interface. Another popular definition of usability is by ISO 9241-11 "Ergonomic requirements for office work with visual display terminals (VDTs) - Part 11: Guidance on usability. According to ISO, usability is dependent on the use situation, and good usability also includes productivity in addition to the factors mentioned above. Designers base their work and processes on different sets of usability theories and methods in order to create a smooth interaction process between the user and the artifact (Sinkkonen, Kuoppala, Parkkinen & Vastamäki 2006).

For web sites, usability is compulsory for survival. Users have multiple reasons to leave a website if it fails to deliver good user experience. Due to the high numbers of websites that offers the same products and services, commonly, user's first reaction to a difficulty is to leave the website and try the next available one that might offer better service rather than try to spend time to study the current one (Nielsen 2012).

According to Nielsen (2012), there are five quality components, which in combination can qualify a product for having good usability such as efficiency, errors, memorability, pleasantness and learnability of the use situation.

#### 3.2.2.1 Learnability:

Learnability, despite being one of the parameters of usability, it is often used interchangeably the term usability itself. In web design, learnability can be considered the most important feature. By definition, it is a measure used to determined how quickly and easily an average user can learn about a website's interface. From his researches in 2011, Nielsen found that the first 10 seconds after user visits a website is critical for user's decision on whether to stay or leave. Within the next 10 seconds, the risk is still high, and only after 30 seconds does the possibility of user staying longer increase. The better learnability a website has, the more likely visitors would stay to explore. Over time, good learnability enables users to utilize the website to its maximum potential in faster pace.

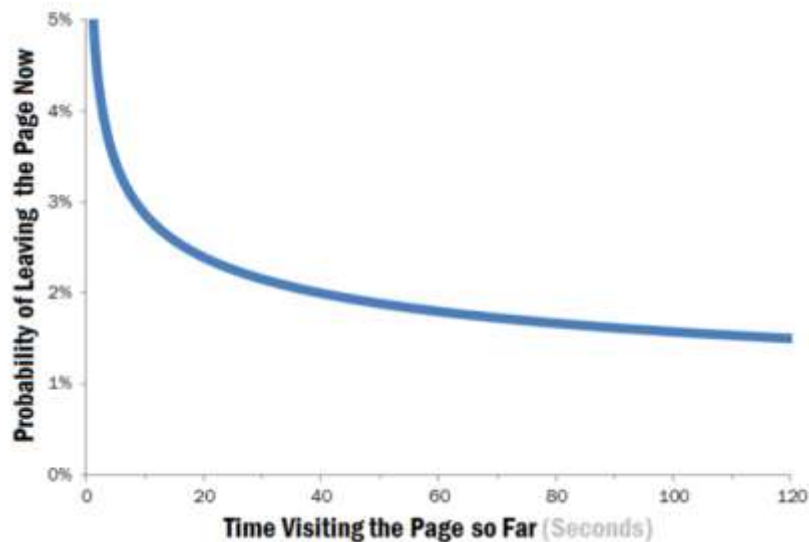


Figure 1 How long do users stay on web pages? (Nielsen 2011)

A simple method to increasing learnability is to design a website with familiar elements. According to Learnability (2016), there are seven factors researchers believe to have impacts on the learnability of a website: visibility of commands and menu options, command feedbacks, continuity of task consequences, design conventions, help presentation, context sensitive help and error prevention. These factors are presented in majority of existing website, there are also guidelines to help designer understand and remember how and where to position these elements.

### 3.2.2.2 Efficiency

After user recognizes and understands how to use the website (learnability), the next step is to perform the intended task. Efficiency measures how much time it takes for users to complete the tasks. Shortcuts and quick keys are example of basic concept that enable users to be more efficient (Louis 2013).

A website's visual contributes in helping user navigate and find the information they look for. Reusing commonly used function also enable users to use the system faster without relearning a lot of tasks. For instance, an online web site must present its users with clear catalogue as well as a good post-sales system where user can track and view their orders after purchasing the goods. (Affordableusability 2011)

Coherent errors message with human language instead of computer language, feedback that confirms user's action, consistency and clear navigation are also factors that help increase user's efficiency (Louis 2013).

### 3.2.2.3 Memorability

Memorability is a concept used to measure how easy users can reestablish the same level of efficiency after their last visit to the website. People have a tendency to follow routine and avoid changes. The same principles can be applied for using a website. Once users have gone through the steps of learning about the website content during their first visit, they expect the functions to remain relatively the same when using it again in the future. A website with good memorability encourages users to keep using its service, gain more loyal customers for the business. The main issue linked to bad memorability is users are less likely to spend time learning and relearning a system unless they can become more efficient at using it within a period of time (Louis 2003).

As a result, websites are expected to be more intuitive. However, it raises another problem as intuitive behavior varies greatly between individuals. Nevertheless, there are two common design factors which can be used to increase memorability: traditional design features or visual presentation and unexpected reaction or message from the website when user submit an action (Louis 2003).

Memorability is harder to measure and establish compared to other features, which is why UX designers should involve users in the development process and test the designs with a group of users to discover what helps user remember (Louis 2003).

### 3.2.2.4 Errors

Louis (2003) defines errors as a concept relates to how well a website behaves and recovers when encounters an issue. A faulty website can cause a lot of stress for its user, consequently resulting in loss of revenue and reputation. When an error occurs, the website must be able to provide users with enough information to understand the nature of the error and if possible, instruction on how to proceed with the original task.

The most common problem is the lack of warning message users should receive when an error occurs. The message acts as a mean to notify users they have encountered a problem. Without this message, users will be unaware of the error or misunderstand whether the error occurs due to a mistake from users or a technical issue. Considering the importance of the message, its content should be understandable, precise and helpful. The design of an error message should also be consistent and friendly to not confuse users and guide them to the next action (Louis 2003).

### 3.2.2.5 Satisfaction

Satisfaction describes how satisfied users are when using a website, it has a direct correlation with the other four components of usability, if the other four are good, user's satisfaction of the website is good. Appearance and UI of a website must be taken into consideration and there are several design guidelines and ethics which can help designers when creating a new web site. It is advisable for designers to follow the guideline instead of coming up with original idea unless they have the possibility to run usability test on the new idea with users. The reason behind this phenomenon is that once people get used to doing or using a product, they sometimes forget the hard learning process that help them get to that level, hence they become oblivious or frustrated toward those who just come in contact with the same product for the first time. (Sinkkonen, Kuoppala, Parkkinen & Vastamäki 2006)

### 3.3 Purpose and target audience for website marketing

According to Shorr (2013), in order to create and maintain a productive website, companies must have a strategy that identifies how the website can be used to support the true nature of the business, how to reach target audience and the future expectation of the website in term of how much traffic and conversions it can reach. A purposeless website is an inadequate business tool can cause company to lose reputation and many potential customers.

The goal of the website is to generate high traffic which means to attract as many visitors per day as possible. Having high and relevant content would then ensure high possibility of increasing conversion thus expanding the business. Having a defined group of target audience is a way to ensure high conversion rate for business compare to assuming everyone is a potential customer. Traditionally, companies only identify potential customers' age, gender and income level by making assumption based on insight, anecdotal evidence or experience. However, this practice is no longer sufficient. Companies are required to have more indepth knowledge of their customer. This can be done by using multiple design methods such as shadowing the customer, study their behavior and surveys etc. (Laja 2012).

### 3.4 The future of website marketing

According to Gavril (2015), companies need to stay up to date to the latest trends to have advantages over competitor and avoid wasting resources on outdated perception. Those who fail to predict and follow the trend will miss the benefits and opportunities to grow.

As technology developed, many changes have occurred and improved web design from strictly text-based to the current trend of responsive, flat design. Companies have started to realize the critical role of UX design in creating a website (Lähdesmäki 2016).

For the past years, wearable technologies and mobile devices have started to gain more momentum and mobile traffic is dominating over desktop. Designers must improve website design in order to deliver smooth interaction between the users and the website via different devices' screens (Gavril 2015).

Another vital trend that will greatly affect web design and online marketing is the continuous increased investment in advertising. More than 10 billion dollars are expected to be invested in digital marketing compared to the amount used in 2015. This puts pressure on designers to improve their skills to keep up with the ever-changing design trends and on companies to refine their marketing strategy.

#### 4 Research approach

According to Saunders, Lewis and Thronhill (2009), researching is the process of examining and analyzing a specific subject in order to discover or revise theories, conclusions and recommendations. More than often, the only way for designers to understand the nuances of a feature and its importance to the users is through conducting researches. The most common methods are quantitative and qualitative researches.

According to Babbie (2010), quantitative research's main objective is gathering and analyzing numerical data to create generalization of people's behavior or explanation for a particular phenomenon. Data is collected through polls, questionnaires and survey and thereupon analyzed using statistical, mathematical or numerical methods. The data is then presented in form of graphs, charts or statistics. The downfall of quantitative research is its dependency on generic information but cannot cover opinions and behaviors of the participants.

On the other hand, qualitative research provides detailed results about the participant's behavior and reasoning behind their decisions. It allows researchers to explore the test subject in more depth and details in a cheaper and more flexible way as the research only requires a low numbers of participants. The disadvantages of this method is the results cannot be used to create generalization to a broader audience because the data gathered is personal and limited (Saunders, Lewis & Thornhill 2009).

Normally, companies tend to use a mixed-method approach as each technique provides answers and insights to different questions and perspective. However, due to limited time and resources, only one method can be applied for this thesis. This section provides more information on the suitable chosen methods, which tools and methods used to collect data and the validity and reliability of the results.

#### 4.1 Qualitative research

Since UX design highlights the importance of user research and understanding user's needs and emotions, a qualitative approach is chosen. According to Eriksson & Kovalainen (2008), qualitative method is commonly used in social and cultural research that needs more personal interpretation and understanding. The results from qualitative research offer new ideas and concepts that can help researchers understand how the participants feel and what they want from the research subject.

In usability and UX design studies, the data collected in qualitative research can be used to identify themes and patterns behavior participants demonstrates during the testing process. It gives researchers ability to directly observe, communicate and even adjust the studies affectively when different ideas and circumstances occur to meet the objectives (Rohrer 2014)

#### 4.2 UX Design methods

Depending on the type of site, timeline and environment, there are a large variety of design methods designers can choose from. Each method can be useful in different stages of the design process.

##### 4.2.1 Persona

Personas are fictional individuals usually created at the start of the development process to represent different user groups. A persona is given a detailed background with information such as characteristic, lifestyle, attitude, motivation and business objectives in order to demonstrate user's behavior and reactions as realistically as possible. In a research, personas are used together with other design methods such as customer journey and blueprint to tell stories how users would react when using the products different circumstances. The data collected is used to inspire decision about design and functionality (Methods - Persona 2010).

##### 4.2.2 Customer journey



Customer Journey is a UX design method, which can help the company learn about different routines or choices customers may make during a visit. Customer's decision varies a lot upon factors such as touch point, senses, and actors. By using customer journey, designers can identify potential error or fail points which are factors that cause negative impacts on customer's emotions or behavior; thus, it helps service designers to adjust and improve. (Nisula 2013)

To improve the business, the design must make more of every enquirer and customer they have. Achieving this, whilst maintaining margins, requires three things:

1. Make it easier for customers to complete their intended goal by designing service to reduce customer effort
2. Support customers better during buying decisions by integrating contact
3. Appropriately engaging customers between purchases to build lifetime value - develop a customer contact strategy

#### 4.2.3 Heuristic evaluation

According to Nielsen (1995), Heuristic evaluation is a usability method where a small group of evaluators examine an interface design and compare the design elements with the heuristics - a list of recognized usability principles. Due to the nature of this method, having only one person as an evaluator is not as efficient as having more people as different people are more likely to find different usability problems. Nielsen (1995) recommended that a group of 3 -5 evaluators are sufficient.

Heuristic principles	Explanation
Visibility of system status	Users must be kept informed about what's going on in the system within reasonable time through appropriate feedback
User control and freedom	Support undo and redo function to give users freedom to control and navigate through the system freely and quickly even when encountering mistakes or errors.
Match between system and the real world	Information must be presented in a natural and logical order and the system's language must represent familiar language users use in the real world.
Consistency and standards	Content, function and design must be the same in different situation.
Error prevention	Careful design which prevent problems from occurring

Recognition rather than recall	Instruction and information must be visible and easily accessible to minimize user's memory load.
Flexibility and efficiency of use	Include accelerators to speed up the interaction for users
Aesthetic and minimalist design	Only present needed information
Help users recognize, diagnose, and recover from errors	Understandable errors messages with possible solutions for the problems.
Help and documentation	Visible user guide and constructive knowledge base.

Table 1 10 Heuristic principles (Nielsen 1995)

#### 4.2.4 Individual interview

Individual interview is a very simple yet very powerful tool used to collect information about user's in-depth perspectives of the website. It is normally carried out on a one to one meeting where mistakes and misunderstandings can be identified and cleared up on-point. Interviews must be analyzed carefully to collect truth from not only verbal communication from the user but also their body language and behavior. There are five types of interview questions: structured interview, semi-structured interview, unstructured interview, informal interview, and focus group (Matvejeff 2013).

#### 4.2.5 Usability testing

Usability testing is a method of observing users while they try to perform a list of given tasks on a product. It is often confused with user's opinion though they are two very different concepts. Usability testings records what users do and how they feel during the process of using the product while user's opinion of the product can be about any general feature of the product (Sinkkonen, Kuoppala, Parkkinen & Vastamäki 2006).

There are two types of usability tests depending on the stages of the design process: development test to find a suitable usability solutions for the design and the approval test to ensure the products can fulfill all the usability requirement without redesigning. The test can encompass the whole website or part of it. The tasks given to users during a usability test are those closely resembles what real users would perform in a real environment. During the whole process, everything the participants do or say is recorded with their consent (Sinkkonen, Kuoppala, Parkkinen & Vastamäki 2006).

#### 4.3 Chosen methodology

The data for the research was collected through traditional qualitative research methods such as in-depth interviews to find out more about the users and how they use the website. UX team prepared 2 types of interview for the research:

1. Interview with Shoppire's CEO, this interview consists of open-ended questions in order to learn more about the company's plan strategy and goals.
2. Interview with 10 participants recruited by the marketing team. The interview will be conducted in two stages: background interview and concept testing before the usability test and the user satisfaction interview after the usability test. In the first interview, many background questions were asked to collect information. Open ended questions were included to encourage the interviewee to discuss and give more in depth evaluation. The questions were about Shoppire service and website. For the second interview, participants were asked to fill in a questionnaires to rate different aspects of the website they test in the usability test

The interviews were conducted in Shoppire's main office in Hakaniemi with other members in the UX design team.

Due to lack of time and resources, the following design methods are chosen due to their flexible nature and their usefulness through several steps of the process: persona, customer journey, heuristic evaluation, interview and usability test.

#### 4.4 Validity and reliability

According to Saffer (2010), validity refers to the context of whether the data collected meet all the requirement of the research method. The validity of the research data depends entirely on whether the test subjects have the right behavioral criteria and characteristic that fits the business's target customer segment. The right people can be selected by using a screener, which is a set of initial questions to test the subjects to ensure they match all the requirement. The screener should include questions about specific subject area related to the research topic in order to filter out impostor who fabricate their background to participate in research strictly for money.

The reliability of a research relies on whether any significant results founded by the research is consistent and repeatable. This means any researches performed under the same subject and conditions must also generate similar results (Shuttleworth 2008)

The information provided in the theoretical part of this thesis are gathered from trustworthy book sources in UX design and online marketing along with academic online sources, henceforth considered valid and reliable. All the material used are listed under references. The information about the company is written based on facts gathered from interview with the founder of the company, documents provided by the company and emails. To ensure the validity and reliability of the interview, structured questionnaires were used and the interview was recorded.

The data gathered from the researches can be considered reliable but not without errors because they're based on human judgement which vary wildly between individuals. Statistics of the website traffic were monitored and gathered from the IT team of Shoppire thus considered reliable.

Since the research is based on a small focus group living in Finland, the result of this research should not be generalized to other companies similar to Shoppire in other countries. In addition, Shoppire's website is still under development so the statistics, design and content are constantly updated.

## 5 Empirical study

### 5.1 Shoppire

Shoppire is a startup company based in Finland and India. It was founded on November 2014 in Finland. The product Shoppire is developing is a predictive online shopping platform which allows users to order products with the cheapest price from their preferred stores and receive their orders through delivery from a local retailer. The vision Shoppire has is to revolutionize customer shopping with intelligent predictive shopping algorithms, hyper local bidding platforms and partnering with trusted retailers and partners who will delight customers with convenience and savings.

The aim of Shoppire is to help users save time by doing their shopping online. The special feature that makes Shoppire different from other online shopping platforms is its predictive component. Data is collected from the user during their first 3 weeks of using the application, then by using various data science techniques, the app learns the shopping pattern and provides a list of items the user needs for their next purchase.

Shoppire's target markets are India, UK and Finland with the main focus being India. While the app is currently piloted in India, but there are several other planned features in the product

roadmap including recommendation engines, restaurant predictions, and collective deals as part of the app.

Currently, the company have development teams working in both Finland and India with more than 20 members. The mobile application is not yet available since they're still in prototypes but their future platform is on both Android, Iphone and window phone. The website is online as a business review and recruitment tool, with future plan to convert into also an online shopping website.

## 5.2 S.W.O.T Analysis

<p style="text-align: center;"><b>Strengths</b></p> <ul style="list-style-type: none"> <li>- Unique product and concept</li> <li>- Low-cost</li> <li>- International staff</li> <li>- Competitive price</li> </ul>	<p style="text-align: center;"><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>- Low reputation</li> <li>- Finnish market is not easily penetrable</li> <li>- Internal communication</li> <li>- Partnership with stores and delivery services</li> <li>- Misunderstanding of business concept</li> <li>- Low budget</li> </ul>
<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>- Market opportunities in Finland and India</li> <li>- Development process in design and marketing</li> <li>- New trend and technologies</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>- Traditional online stores</li> <li>- Fierce competition</li> </ul>

Figure 2 S.W.O.T Analysis Matrix

### 5.2.1 Strengths

Shoppire offers a very unique concept compared to the common online shopping platform which is a competitive advantage that increase the company's position in the market. The cost of the

development process can be kept to minimum since Shoppire can utilize resources from India where the cost is much cheaper. The staff have very different background in term of culture and internationality, they provide different perspectives and ideas that can help Shoppire greatly improve. Partnership with local stores and services enable Shoppire to offer cheaper products to customers.

#### 5.2.2 Weaknesses

On the other hand, since Shoppire is founded recently, its reputation is minimal or non-existence in the market. The market situation in Finland is very difficult due to the dominance of other retail such as S-group and Kesko Öyj. Team members of Shoppire live in different time zone, which lead to prolonged communication period. The process to establish partnership with food store and delivery service is full of obstacles because the concept is very new and Shoppire has not yet had a brand name. Customers have to go through a 3 week period of trial in order for the algorithm to learn about their rhythm and behavior, which is quite a long time and can make customer misunderstand the business concept thus refrain from using the application. Having low budget is also a factor that causes many problems during the research process.

#### 5.2.3 Opportunities

Shoppire finds opportunities in the constantly changing shopping behavior globally. Consumers have started buying all products online, and physical retail is losing market share at a rapid pace. With the current model and concept, Shoppire will be able to leverage the ecommerce opportunity. There are plenty opportunities for Shoppire in Finland and India, especially India since it is a developing country with curiosity for new concept. Since everything is still in development process, Shoppire team have the flexibility to test and adopt new technologies and design to improve.

#### 5.2.4 Threats

As mentioned above in Section 5.1.2 Weaknesses Chapter 5 Shoppire, Finland market is currently dominated by two large corporation with their individual websites and application, the pressure fall on Shoppire's marketing team to connect and negotiate with them to form deals that can benefits customers. In addition, new ecommerce business are being established in Finland due to the large support Finnish government provide for Startups companies (Weinglass 2015). For this reason, Shoppire team faces many challenges.

### 5.3 Marketing

Shoppire's marketing objective is to introduce its concept to both business and customers as a futuristic and predictive online shopping platform and to establish trusty connection with as many local food stores as possible for future business to enable hyper local shopping and shorten delivery time for customers.

Shoppire identifies its product as a personalized online shopping platform for consumers who want convenient shopping, things delivered home, and also savings where possible with the target market locating in India.

Currently, Shoppire has not any active marketing campaign since the product is not finished. However, the team has been actively engaged in Startups event and email advertising in order to introduce the new concept, establish brand image and find potential investor.

Shoppire has established its social media profile on Facebook and Twitter where it announces changes and articles to its followers.

#### 5.4 Website

Shoppire's website was published on November 2015. It was intended to be an online shopping platform, however, due to various issues gathered from the research mentioned in section 6.5 Result in chapter 6 Design process, the current version of Shoppire's website is an online business brochure used to introduce Shoppire's concept, vision, the team and a callout to apply for different positions in the company to viewers.

### 6 Design process

In order to collect data for the thesis, the author participated in Shoppire's design process as a UX designer. The design process of Shoppire is divided into 4 phases: Planning, Research, Design and Testing, it includes several studies and testings on both the website and the mobile application on multiple platforms.

The design process started in November 2015 after Shoppire has officially chosen its logo and brand image. The aim of this process is to study about shopper's behavior and understanding of Shoppire concept in order to create a website and mobile application with high usability and good user experience so as to attract more customers for the company.

In this chapter, the first two stages of the process will be introduced in detailed. The implementation of the research and design methods are explained as well as the results. The Design

stage is not mentioned due to its irrelevancy to the thesis topic, and the testing Stage is not mentioned as it is still currently in process.

## 6.1 Objectives

The objective of the research is to study how users behave when using the website and application and gather their opinions about how to improve the business concept as well as collect new ideas to improve.

## 6.2 Planning

The planning phase took place from November 2016 to December 2016. During this process, the UX team conducted many interviews with the founder of Shoppire to understand the strategy, vision and future plan of the company better. After collecting information about the company, the team prepared a schedule for the upcoming research and design testings.

Schedule	Task
November 2, 2015	Interview Shoppire's founder
November 6, 2015	Publish first version of the website
November 18, 2015	Prepare the research questions
November 20, 2015	Meeting with the designer team to discuss about the process
November 25, 2015	Finalize the planning for the design process
December 1, 2015	Meeting with marketing department to discuss about potential customer and execute plan to recruit participants for the researches
December 5, 2015	Prepare consent documents and background questionnaires.
December 9, 2015	Analyze first digital version of the prototype using Heuristic evaluation.
December 15, 2015	Send back test results and suggestion to IT team. Send consent documents to participants and information about the tests.
December 20, 2015	Schedule interviews with individual participants
January 10, 2016	Interview participant 1-5
January 12, 2016	Interview participants 5-10
January 20, 2016	Create persona and customer journey based on interview results. Send suggestion and ideas to designer and IT team for second prototype.
February 10, 2016	Run heuristic evaluation tests and analyze results on the second version of the prototypes. Update website to second version
February 13, 2016	Schedule usability tests with individual participants
February 20, 2016	Usability test participants 1-5
February 23, 2016	Usability test participants 5-10
March 10, 2016	Summarize test result and finds. Send suggestion to designer and IT team



Table 2 Research schedule

The budget for the design process was 200€, which is very low due to Shoppire's lack of funding. This limited researchers from getting the best tools and recruiting more suitable participants for the research.

After the participants were chosen, they were given a consent form to explain the interview and what they were supposed to do, which information they consented to provide and if they're consented to be recorded.

After the planning stages, the designers had gathered enough information to choose suitable design methods for Shoppire. Several semi-structured interview was conducted to collect opinion about the first version of the website which leads to the website first update.

### 6.3 Persona and customer journey

A persona was created to represent a large portion of Shoppire's target users is a novice user like Sita. They have different expectation in the website and application. Any errors can easily discourage them from continuing to use the service.

Sita is a young successful teacher who has lived in Finland her whole life. She has never used a shopping website or application for grocery before but she has recently adopted an interest in technology and wants to test something new. She finds the concept of Shoppire very interesting, however, the website does not provide her with enough information and the design is more complicated than it should be.

### PERSONA CASE: SITA SAI



#### BASIC INFORMATION

- Age: 26
- Single
- Teacher 2100€/month
- Graduated in Bachelor of Education
- Personality: Patient, kind, friendly

#### PERSONA

- Skills: Organizing, cleaning, analyzing
- Flaws: Forgetful
- Frustration: Complicated process
- Hobbies: Gardening, photography, cooking

#### GOAL:

Help educate children into decent human being with good manners

#### PURPOSE OF USING SHOPPIRE:

- Want to try out new shopping applications
- Save money and time

#### Illustration 1 Persona

In Customer journey, the team presents the chain of reaction which the persona - Sita exhibit when she uses Shoppire for the first time. In this case, Sita ultimately made the the decision to not purchase after some complications. The red text boxes represented the fail points.

From the above methods, several immediate problems were revealed. Shoppire's design is out of date and the layout is confusing. The amount of ads makes the website significantly slower. The search function was also not working due to technical problems and lack of products. The biggest problem lies in the concept of Shoppire. Without prior knowledge of the concept, user couldn't understand how Shoppire works therefore judging the website's lack of product origin and package information.

From analyzing the journey, the team learn about Sita's struggle when using Shoppire and came up with several ideas for the second prototype that would be used during the interview and the usability test.

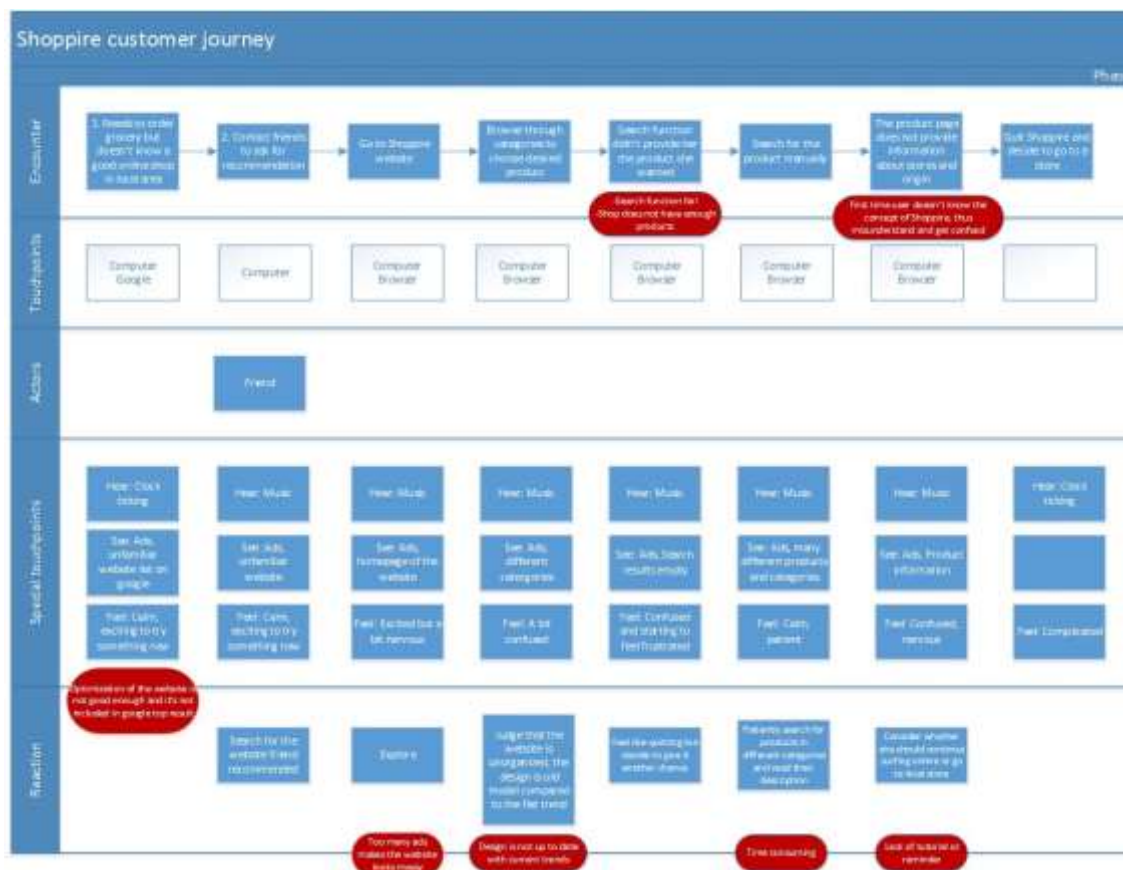


Illustration 2 Customer Journey

The issues include:

- Search function failed: Sita couldn't find the product she wanted. The search function only worked for very basic word search. Sometimes failing completely.
- Shop did not have enough products: Shoppire currently has only negotiate with one partner, K-market in Kampi. Thus the products Shoppire can offer are limited to what K-market is willing to offer. This also interferes with Shoppire's concept, which is to negotiate for the best price from different stores then offer it to customers.
- First time user doesn't know the concept of Shoppire, thus misunderstand and get confused: Shoppire's concept consists of two factors: the negotiation with the other stores to get the best price and the predictive feature, both of which require waiting. Since Sita didn't fully understand the concept, she didn't understand why she had to wait awhile before paying.
- Optimization of the website is not good enough and it's not included in google top result
- Too many ads makes the website looks messy
- Design is not up to date with current trends

## 6.4 Usability test

Right before the usability test, the observers explain to the participants the nature of the test: the participants are required to complete the tasks given to them, they're to speak aloud when doing the test, also voicing both their effort, likes, dislikes and struggles. The observers also explain that the test is for the company to test the website, not the participants, and the participants are free to stop whenever they want. For the usability test, participant had to complete 3 tasks given by the observer. During the test, the observer's role is to record and analyze the participant's behavior when trying to complete the given tasks without interfering unless the participant encounter a severe technical issue or cannot proceed the task in a long time.

Task 1	Create an account on Shoppire using given email and password
Task 2	<ul style="list-style-type: none"> <li>- Make a purchase of product A and product B</li> <li>- Remove product A from the basket</li> <li>- Change the wanted amount of the product B</li> </ul>
Task 3	Check out

Table 3 Usability tasks

## 6.5 Results

Altogether the process lasted more than 5 months due to slow communication within the company and holiday period.

The team conducted interview and usability tests on 10 people as planned. The data collected from the interview was analyzed and reported from UX team to the rest of the company to give a better understanding of the current situation.

The background interview provided the team with information needed about Shoppire's potential users:

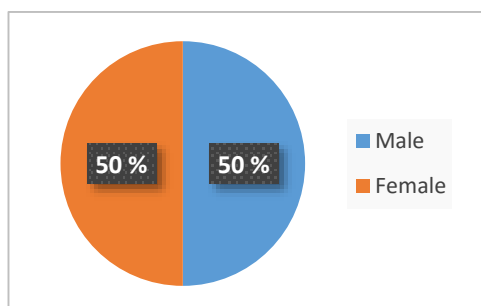


Figure 3 Gender

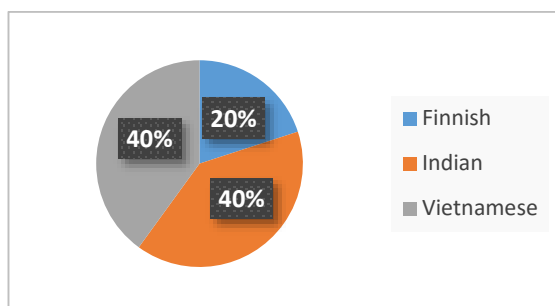


Figure 4 Nationality

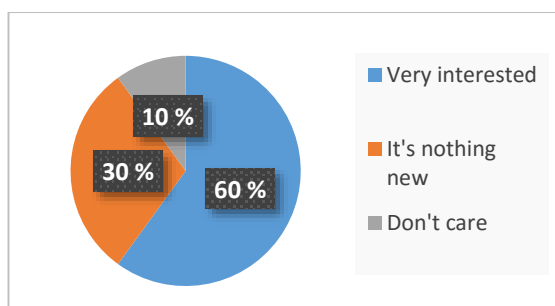


Figure 5 What you think about Shoppire's concept?

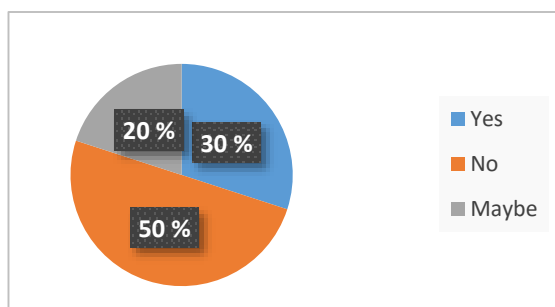


Figure 6 Will you continue to use Shoppire?

After the first round of interview, the founder of Shoppire decided to remove the online shopping function from the website and only use it to display information about the company. The shop version will be kept in private until it has been completely developed and redesigned. The current website is gaining traffic daily, but the numbers of visitors is low due to poor search engine optimization. Regardless, the interview's results showed that users are very interested in the new concept Shoppire offer but had doubts in whether Shoppire could become success in Finland.

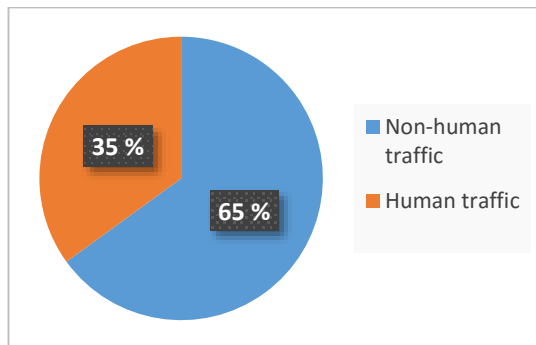


Figure 7 Traffic distribution chart

The chart indicated that the numbers of human visitors are significantly lower than the numbers of automatic bot and spam bots which in invalid traffic and bring no benefit to the company. The result shows that Shoppire needs to improve the web optimization and security in order to prevent invalid traffic.

Heuristic evaluation done by the researchers explained the positive and negative features of Shoppire website in term of function and design.

Heuristic principles	Severity	Problems
Visibility of system status	Severe problem	Most users expect to be able to make a purchase right away instead of waiting for an auction of their basket. Shoppire's website does not have a clear guide on what user has to do.
User control and freedom	Medium problem	There is no Back button in the website for user to return to previous step, instead they have to use the back button of the browser, which in turn takes them to the homepage.
Match between system and the real world	Good solution	The language is simple and easy to understand.
Consistency and standards	Low problem	The website is simple and consistent since it does not have many functions yet.
Error prevention	Medium problem	Some buttons do not function and site takes a long time to load.
Recognition rather than recall	Good solution	The website is straightforward and easy to understand.

Flexibility and efficiency of use	Potential problem	The design is straightforward and does not have any shortcut. This will become a problem for veteran users as they can't make faster purchase.
Aesthetic and minimalist design	Severe problem	Too many ads which distract users from using the site effectively.
Help users recognize, diagnose, and recover from errors	Medium problem	Design of error message box is not friendly and does not offer solutions.
Help and documentation	Medium problem	There is no guide or Q&A section to help users.

Table 4 Heuristic evaluation results

After the interview, researchers were able to create a list of features that participants considered the most important for the website.

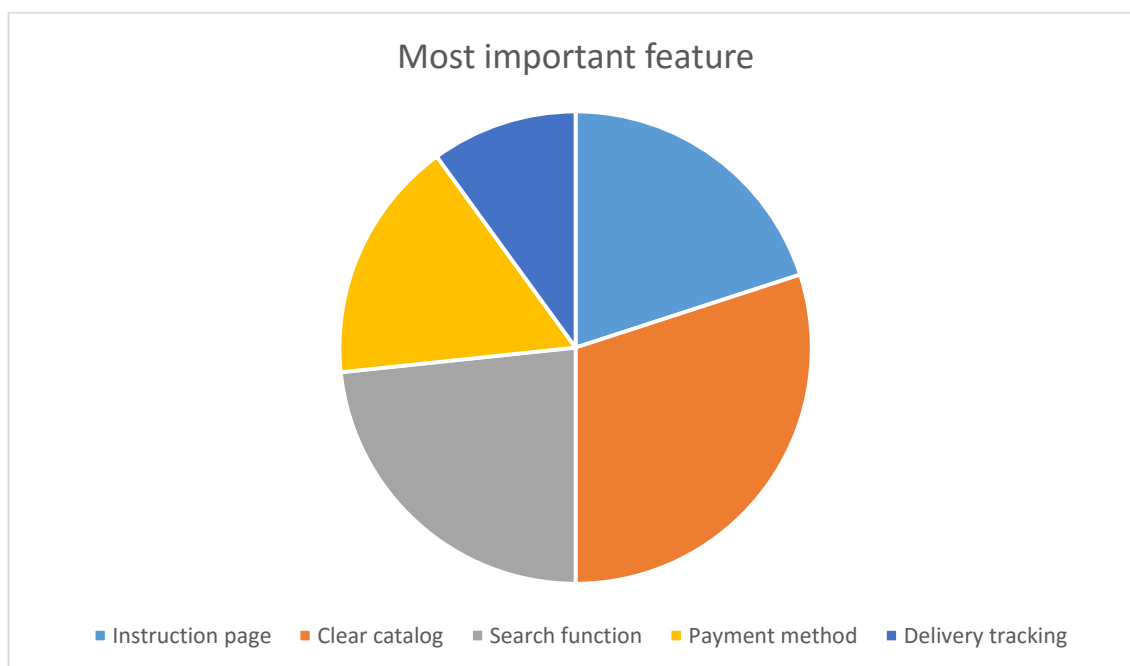









Illustration 3 Most important features according to users

In addition, after the usability test was completed, the participants also partook in a post-test interview where they rate and evaluate different aspect of Shoppire website. All the tests were recorded in order to further analyzed the participant's behavior.

Statement	Responses
There are a variety of products in the service	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div> <p>Participants finds that the website catalogue lacks variety. They think there should be a bigger collection of products.</p>
It is easy to understand the structure of the service	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div> <p>The participants agree that the design is very straightforward and they can find different section easily.</p>
The appearance of the service is pleasant	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div> <p>There are too many ads and the color palette was unpleasant to the eyes.</p>
The front page of the service is informative	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div> <p>The concept is new to participants. The front page offered a brief explanation on the concept, but many participants feel that there should be clearer explanation and examples to make it easier to understand.</p>
Moving from one page to another is easy	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div> <p>There is no “Undo” or “Back” button so the participants had to go the browser “Back” button which usually results in losing process of the task they were doing.</p>
I always know my location in the service	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div> <p>The design of the head and menu do not offer information about the location of the participants.</p>
It is easy to perform given tasks	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div> <p>The search function does not work correctly so the participants sometimes have to search for the product manually. The check-out process is confusing.</p>








The service includes terms and words that are unfamiliar to me	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div>
Help and guidance are sufficient in the service	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div>
Search function is easy to use	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div>
The search results are presented clearly	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div>
Check out process is simple and fast	 <div> <span>■ Agree</span>  <span>■ Disagree</span> </div>

Table 5 Usability test results

The current published version of the website still have some errors with the most serious one being the lack of company logo on the website and the design is still not completed. Nevertheless, it has attracted more visitors in a faster pace compared to the previous version.

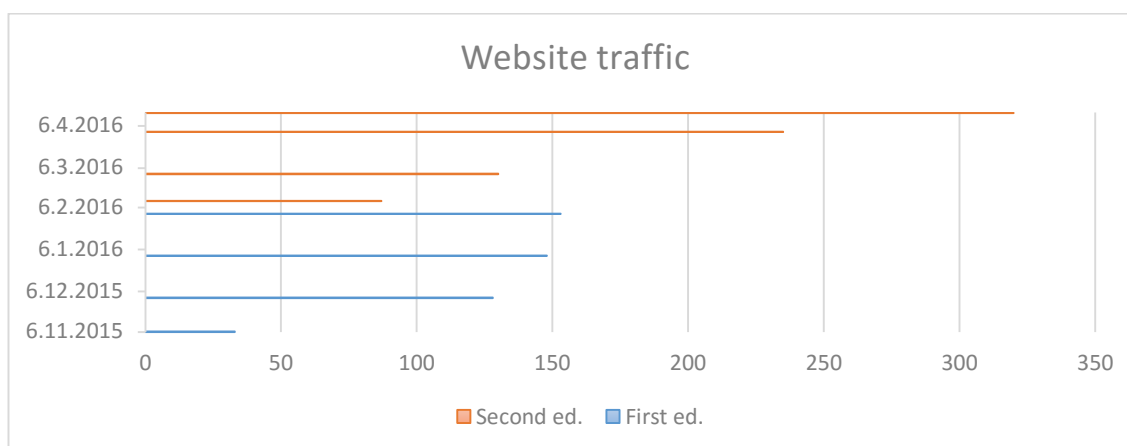


Figure 8 Traffic of both versions of the website

Results from the customer journey, heuristic evaluation and usability test provide useful insights on how to improve the website. Similar research for future version of the website will be conducted to further improve the website and attract more customers.

## 7 Conclusion and recommendation

The duration of the design process is a disadvantage, since it caused the company to lose many business opportunities compared to a normal design process which usually lasts maximum 3 months before the design process starts to repeat.

Another factor that affects the research is the lack of communication from the teams within the company. As stated in Section 1.2 Limitation Chapter 1 Introduction, the team consists of individuals with very different timetables and lifestyles, the lack of presence of the founder also caused the team to drift apart.

Nevertheless, the results of the research show a lot of insights on how to improve the website to be able to fully utilize it as a marketing tool. The UX team also provided a list of development ideas such as:

- Promote Shoppire website more on social media to gain more visitors: Currently not many people have known or heard of Shoppire's concept. Since the concept is very new and quite complicated, it'd be very useful to start a marketing campaign to introduce and explain the concept to potential users.
- Provide a Finnish or Indian version of the website: Finnish and Indian people have very different culture and preference, thus providing these two groups with different web design and languages is a good way to promote the website and encourage people to try it more.
- Redesign Shoppire in a flat design theme: Flat web design is the current trend in design, it also provides the website with a more simple, straightforward looks that would encourage viewers to use it more.
- Eliminate the redundancy factor of icons and remove advertisements: Keep the website as clean as possible with no extra distractions to help users focus on the main purpose of using the website.
- Minimize the compulsory amount of clicks needed to make purchase: Make the purchasing process short and simple and reduce the numbers of steps and clickes user has to go through to complete their purchase.

- Improve the Search function and find more partners: Partnering up will provide Shoppire with the ability to expand the current online store with much more variety of products. The search function also needs to be fixed to make the browsing experience more flexible.
- Include Q&A and guide section to help users understand what they need to do and what to expect from the service.

A positive outcome of the research is the updated version of the website to exclude the faulty shopping platform that was causing negative impacts.

The design process is still continuing as well as further studies into the subject to create the best shopping platform for Shoppire to attract customers. The persona Sita will be kept to create future customer journeys for Shoppire's new website. Shoppire also needs to consider investing more budget in the research process to motivate the team as well as utilize better tools.

## 8 Summary

As technologies evolves rapidly, UX design is also changing as designers are able to do more indepth studies into human behavior and various design methods are being introduced constantly. Surfing internet has become a daily routine for many people and many business have taken the opportunities to digitalize many aspect of human life. Many online shopping platforms are successful because they were the first to take up on the opportunities. For a new internet-based startup company, having a well-designed website is vital in order to attract customers and build brand awareness.

The aim of this thesis is to understand the elements of a good website, how it helps company reach customers and how to utilize the design methods to reduce time and cost. The whole research was done on both website and mobile application but this thesis concentrated on only the website version.

The thesis was written based on literature, online resources, study material and interviews with both the founder of the company and the test participants while the author was an employee of the company. The chosen theories focused on the concept of UX design and its methodology. It provided the author with indepth knowledge of UX design and website marketing. Upon further researches into the materials, the author learned about the opportunities UX design contribute to the business.

The chosen theory worked well with the research and the design process that was carried out. Based on the theories, the author was able to assess the business current position and make recommendations for the future

The findings of the researches indicate that Shoppire needs to design a better website in order to attract customers and many recommendation was made to give a designer and IT team of Shoppire a better understand of how and what to improve.

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## Appendix 1: Persona

### PERSONA CASE: SITA SAI



#### BASIC INFORMATION

- Age: 26
- Single
- Teacher 2100€/month
- Graduated in Bachelor of Education
- Personality: Patient, kind, friendly

#### PERSONA

- Skills: Organizing, cleaning, analyzing
- Flaws: Forgetful
- Frustration: Complicated process
- Hobbies: Gardening, photography, cooking

#### GOAL:

Help educate children into decent human being with good manners

#### PURPOSE OF USING SHOPPIRE:

- Want to try out new shopping applications
- Save money and time

### PERSONA CASE: SITA SAI



#### EXPECTATION FROM SHOPPIRE

FUNCTIONALITY	IMPORTANCE
Simple layout (Navigation)	85%
Quick notification	50%
Non-technical language	100%
Information sharing	60%
Self-education tools	90%

## Appendix 2: Background questionnaires

### A. BACKGROUND INFORMATION

Age: \_\_\_\_\_

Gender: ☐ Male ☐ Female

Nationality: \_\_\_\_\_

Occupation:

☐ Student

☐ Entrepreneur

☐ Employer

☐ Retired

☐ Unemployed or on leave \_\_\_\_\_

Education:

☐ High school

☐ College / University degree

☐ Comprehensive or elementary school

☐ Else: \_\_\_\_\_

### B. COMPUTER AND INTERNET USAGE

How do you evaluate your computer skills?

☐ Excellent, I understand how computers function

☐ Good, I use computers often and fluently

☐ I can use basic functions such as email

☐ I am a novice in computer use

☐ I don't use computers at all

Which browsers do you use the most often?

☐ Internet Explorer

☐ Mozilla Firefox

☐ Google Chrome

☐ Netscape

☐ Opera

☐ Other \_\_\_\_\_

How often do you use the Internet?

☐ Daily or nearly daily

☐ Few of times a week

- ☐ Few times a month
- ☐ More rarely than few times a month
- ☐ Never

For which purposes do you use Internet?

- ☐ Electronic shopping
- ☐ Electronic chores such as banking, managing emails
- ☐ Reading the news
- ☐ Socializing (e.g. IM, Facebook)
- ☐ Entertainment

### C. USE OF THE SHOPPIRE SERVICE

**Have you ever used Shoppire service?**

- ☐ Yes
- ☐ No
- ☐ I'm not sure

**How did you hear about Shoppire?**

- ☐ Words of mouth
- ☐ Brochure
- ☐ Search engine
- ☐ Social network
- ☐ Advertisement
- ☐ Friends
- ☐ Events
- ☐ Forum or blog

**If not, have you ever heard about Shoppire? What is your opinion on the service Shoppire offers?**

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**Would you refer this product to your friends? Why or Why not?**

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## Appendix 3: User satisfaction questionnaires

**SERVICE EVALUATION**

Evaluate the following statements by checking the correct answer.	Strongly disagree	Disagree	I don't know	Agree	Strongly agree
There are a variety of products in the service	[   ]	[   ]	[   ]	[   ]	[   ]
It is easy to understand the structure of the service	[   ]	[   ]	[   ]	[   ]	[   ]
The appearance of the service is pleasant	[   ]	[   ]	[   ]	[   ]	[   ]
The front page of the service is informative	[   ]	[   ]	[   ]	[   ]	[   ]
Moving from one page to another is easy	[   ]	[   ]	[   ]	[   ]	[   ]
Flow of the service is fluent	[   ]	[   ]	[   ]	[   ]	[   ]
I always know my location in the service	[   ]	[   ]	[   ]	[   ]	[   ]
I found the information I need easily	[   ]	[   ]	[   ]	[   ]	[   ]
It is easy to perform given tasks	[   ]	[   ]	[   ]	[   ]	[   ]
The service includes terms and words that are unfamiliar to me	[   ]	[   ]	[   ]	[   ]	[   ]
Help and guidance are sufficient in the service	[   ]	[   ]	[   ]	[   ]	[   ]
Search function is easy to use	[   ]	[   ]	[   ]	[   ]	[   ]
Modifying the search is easy	[   ]	[   ]	[   ]	[   ]	[   ]
The search results are presented clearly	[   ]	[   ]	[   ]	[   ]	[   ]
It is easy to save the search results	[   ]	[   ]	[   ]	[   ]	[   ]
Updating basket is easy	[   ]	[   ]	[   ]	[   ]	[   ]
Check out process is simple and fast	[   ]	[   ]	[   ]	[   ]	[   ]

**Which features do you like the most? Why?**

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**Which features do you think is unnecessary?**

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## Appendix 4: Rating of the usability problems

### Rating of usability problems



**Good solution** . Good design solutions that should not be changed or at least be careful if any modifications are made to these solutions.



**Severe problem** . Problems to which the user has no workaround. Or problems that could result in large-scale failures that prevent many people from doing their work. Or performance is very poor. Strongly recommended to be corrected.



**Medium problem** Inconsistencies which cause increased error rates or higher need for learning. Or an important function or feature does not work as expected. Recommended to be corrected.



**Low problem**. Cosmetic issues, or problems that slow users down slightly, or minimal violations of guidelines.



**Potential problem**. Usability issues that could become problems. These should be taken in account when developing the design.